arbitration for said bus responsive to said plurality of request signals and said agent identifier".

The Office Action alleges that the above highlighted features are taught in Schnell at col. 3, lines 32-63. Applicants respectfully disagree. Schnell teaches that the "bus master interface...asserts a binary equivalent of its identification number on the bus data signals *to arbitrate for the bus*" (Schnell, col. 3, lines 33-36). Schnell describes, in col. 3, lines 36-56, a mechanism in which bus masters successively assert bits of their identification numbers and determine whether or not they are to continue with the arbitration. Eventually, one bus master remains that matches the identification number driven on the bus and that bus master is the winner. However, this identification number is asserted to arbitrate for the bus, and thus does not teach or suggest "an agent identifier transmitted on said bus *as part of a transaction*, said agent identifier identifying a second agent *using said bus*" as recited in claim 1.

Schnell further teaches that each "slave device also includes an identification number. The winning bus master asserts the identification number of the slave device that it wishes to access on the bus, and all of the slave devices compare the number asserted on the bus with their identification number. The slave device detecting a match participates in that cycle" (Schnell, col. 3, lines 57-63). These teachings do not teach or suggest an agent identifier "wherein said arbiter is configured to determine if said first agent wins an arbitration for said bus responsive to said plurality of request signals and said agent identifier".

Claim 1 further recites a combination of features including: "each of said plurality of request signals corresponding to a respective agent of said plurality of agents, wherein each of said plurality of request signals is indicative of whether or not said respective agent is arbitrating for said bus". The Office Action alleges that these features are taught in Schnell at col. 3, lines 32-36. Applicants respectfully disagree. Schnell teaches that the "bus master interface asserts an arbitration signal to initiate arbitration, and then asserts a binary equivalent of its identification number on the bus data signals to

arbitrate for the bus" (Schnell, col. 3, lines 32-36). As Schnell's further description at col. 3, lines 36-56 makes clear, all the bus masters that are arbitrating use the same set of data bus lines to drive their identification numbers during arbitration. Thus, these lines cannot teach or suggest "each of said plurality of request signals <u>corresponding to a respective agent</u> of said plurality of agents, wherein each of said plurality of request signals is <u>indicative of whether or not said respective agent is arbitrating for said bus</u>". Furthermore, the arbitration signal also cannot teach or suggest a plurality of request signals. See also Schnell's Table 1 (in col. 8), where the ARB* signal is shown as the B[7] bit of the data bus. Furthermore, Schnell teaches: "a signal ARB* is preferably high when the bus 208 is idle and asserted low on the B[7] signal during state ST00 to initiate an arbitration" (Schnell, col. 9, lines 4-7).

For at least all of the above reasons, Applicants submit that claim 1 is patentable over Schnell. Claims 2-8, being dependent from claim 1, are similarly patentable over Schnell for at least the above stated reasons. Each of claims 2-8 recites additional combination of features not taught or suggested in Schnell.

Claim 9 recites a combination of features including: "a plurality of agents coupled to said bus, <u>each agent of said plurality of agents coupled to a respective one of said plurality of request signals for providing an indication of whether or not said agent is arbitrating for said bus</u>, and wherein <u>a first agent using said bus is configured to provide said agent identifier indicative of said first agent</u>, and wherein each respective agent of said plurality of agents includes an arbiter coupled to receive each of said plurality of request signals corresponding to other ones of said plurality of agents and to receive said agent identifier, and wherein <u>said arbiter is configured to determine if said respective agent wins an arbitration for said bus responsive to said plurality of request signals and said agent identifier</u>". The teachings of Schnell, highlighted above with regard to claim 1, also do not teach or suggest the above highlighted features of claim 9.

For at least all of the above reasons, Applicants submit that claim 9 is patentable over Schnell. Claims 10-16, being dependent from claim 9, are similarly patentable over

Schnell for at least the above stated reasons. Each of claims 10-16 recites additional combination of features not taught or suggested in Schnell.

Claims 17-21

Applicants respectfully submit that each of claims 17-21 recite combinations of features not taught or suggested in Schnell. For example, claim 17 recites a combination of features including: "maintaining a state indicative of: (i) which of a plurality of agents coupled to a bus are higher priority than a first agent for an arbitration, and (ii) which of said plurality of agents are lower priority than said first agent for said arbitration; receiving an agent identifier indicative of a second agent using said bus, said agent identifier transmitted on said bus as part of a transaction; and updating said state responsive to said agent identifier".

The Office Action alleges that "maintaining a state indicative of: (i) which of a plurality of agents coupled to a bus are higher priority than a first agent for an arbitration, and (ii) which of said plurality of agents are lower priority than said first agent for said arbitration" is taught in Schnell at col. 12, lines 45-50. Applicants respectfully disagree that anything in this section teaches the above highlighted features. Nonetheless, these teachings are "During phase 0, each remaining bus master compares its MRQ[3:0] id number with the B[3:0] signals and latches the result. The bus master having a matching MRQ[3:0] value wins the arbitration. In this manner, bus master 0h takes highest priority, and bus master 6h (with Dh as id number) has lowest priority". This section discusses the MRQ[3:0] id number of the device, the B[3:0] signals, and the result of the comparison of the MRQ[3:0] signals to the B[3:0] signals. The Office Action then goes on to allege that "updating said state responsive to said agent identifier" is taught in Schnell at col. 9, lines 3-65. However, nothing in this section appears to teach or suggest updating the MRQ[3:0] id number of the device, the B[3:0] signals, or the result of the comparison of the MRQ[3:0] signals to the B[3:0] signals. Thus, Schnell does not teach or suggest "updating said state" as recited in claim 17. Still further, Schnell does not teach or suggest "updating said state responsive to said agent identifier".

8

Schnell teaches that the arbitration priority is predetermined. "Each bus master device includes an identification number with a predetermined priority" (Schnell, col. 3, lines 32-33). "The bus master with the lowest MRQ[3:0] value wins, so that bus master zero with an id number of 0h always takes precedence if arbitrating, and bus master 15 decimal (Fh, hexadecimal) has lowest priority" (Schnell, col. 11, lines 12-15). Schnell also considers schemes in which the highest MRQ[3:0] always wins (see, e.g., Schnell, col. 11, line 66-col. 12, line 12). Thus, since Schnell teaches a predetermined priority, Schnell does not teach or suggest "maintaining a state indicative of: (i) which of a plurality of agents coupled to a bus are higher priority than a first agent for an arbitration, and (ii) which of said plurality of agents are lower priority than said first agent for said arbitration; receiving an agent identifier indicative of a second agent using said bus, said agent identifier transmitted on said bus as part of a transaction; and *updating said state responsive to said agent identifier*".

For at least the above stated reasons, Applicants submit that claim 17 is patentable over Schnell. Claims 18-21, being dependent from claim 17, are similarly patentable over Schnell for at least the above stated reasons. Each of claims 18-21 recite additional combinations of features not taught or suggested in Schnell.

Claims 22-30

Applicants respectfully submit that each of claims 22-30 recite combinations of features not taught or suggested in Schnell. For example, claim 22 recites a combination of features including: "one or more registers configured to store a state indicative of: (i) which of a plurality of agents coupled to a bus are higher priority than a first agent for an arbitration, and (ii) which of said plurality of agents are lower priority than said first agent for said arbitration; and a first circuit coupled to receive an agent identifier indicative of a second agent using said bus, said agent identifier transmitted on said bus as part of a transaction, wherein said first circuit is configured to update said state responsive to said agent identifier".

The Office Action groups claim 22 with claim 1, and alleges that the same

9

teachings relied on for claim 1 anticipate claim 22. However, nothing in the teachings of Schnell, highlighted above with regard to claim 1, teaches or suggests "one or more registers configured to store a state indicative of: (i) which of a plurality of agents coupled to a bus are higher priority than a first agent for an arbitration, and (ii) which of said plurality of agents are lower priority than said first agent for said arbitration" as recited in claim 22. Furthermore, the teachings of Schnell highlighted above with regard to claim 17 do not teach or suggest the above highlighted features of claim 22 either.

For at least the above stated reasons, Applicants submit that claim 22 is patentable over Schnell. Claims 23-30, being dependent from claim 22, are similarly patentable over Schnell for at least the above stated reasons. Each of claims 23-30 recite additional combinations of features not taught or suggested in Schnell.

Section 112 Rejection

The Office Action rejects claims 17-21 under 35 U.S.C. § 112, second paragraph, alleging that the preamble "A method comprising" renders the claim indefinite because it does not suggest the scope of the claimed invention. Applicants know of no basis for the above allegation of indefiniteness. Applicants are aware of no statute, rule, or case law which requires that a claim preamble suggest the scope of the claimed invention. Rather, it is the body of the claim which defines its scope. The preamble merely identifies the claim as a method claim (as opposed to, e.g., an apparatus claim). Applicants submit that the section 112 rejection is erroneous, and that claims 17-21 meet the requirements of 35 U.S.C. § 112. Thus, Applicants respectfully request removal of the section 112 rejection.

New Claims

Applicants respectfully submit that each of new claims 31-48 recite combinations of features not taught or suggested in Schnell. For example, claim 31 recites a combination of features including: "receiving an agent identifier transmitted on said bus as part of a transaction, said agent identifier identifying a second agent using said bus; and determining if a first agent wins an arbitration for said bus responsive to said plurality of request signals and said agent identifier". Claim 32 recites a combination of

features including: "said arbiter is coupled to receive an agent identifier transmitted on said bus as part of a transaction, said agent identifier identifying a second agent using said bus, and wherein said arbiter is configured to determine if said first agent wins an arbitration for said bus responsive to said plurality of request signals and said agent identifier". Claims 33-39 depend from claim 32, and each recite additional combinations of features not taught or suggested in Schnell. Claim 40 recites a combination of features including: "one or more registers configured to store a state indicative of: (i) which of a plurality of agents coupled to a bus are higher priority than a first agent for an arbitration, and (ii) which of said plurality of agents are lower priority than said first agent for said arbitration; and a first circuit coupled to receive an agent identifier indicative of a second agent using said bus, said agent identifier transmitted on said bus as part of a transaction, wherein said first circuit is configured to update said state responsive to said agent identifier". Claims 41-48 depend from claim 40, and each recite additional combinations of features not taught or suggested in Schnell. Accordingly, Applicants submit that each of claims 31-48 recites combinations of features not taught or suggested in Schnell.
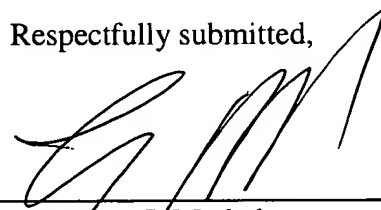
CONCLUSION

Applicants submit the application is in condition for allowance, and an early notice to that effect is requested. If any extensions of time (under 37 C.F.R. § 1.136) are necessary to prevent the above referenced application(s) from becoming abandoned, Applicant(s) hereby petition for such extensions. If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5580-00300/LJM.

Also enclosed herewith are the following items:

☒ Return Receipt Postcard

☐ Petition for Extension of Time

☐ Request for Approval of Drawing Changes

☐ Notice of Change of Address

☒ Marked-up Copy of Amended Claims

☐ Marked-up Copy of Amended Paragraphs

☒ Fee Authorization Form authorizing a deposit account debit in the amount of $756 for fees ($180 IDS fee, $252 for 3 excess independent claims, $324 for 18 excess claims over 20).

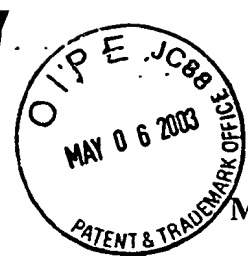☒ Other: IDS, including PTO-1449 form and references

Respectfully submitted,

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Date: 5/21/03

12

Marked-up Copy of Amended Claims:

29. (Amended) The arbiter as recited in claim [27] 22 wherein said bus is a split transaction bus, and wherein said arbiter is configured to arbitrate for a data portion of said bus.